New species of *Endelus* Deyrolle, 1864 (Coleoptera: Buprestidae) from Sulawesi, Indonesia

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Abstract: *Endelus* (s. str.) *barclayi* sp. nov., *E.* (s. str.) *splendens* sp. nov., and *E.* (s. str.) *nairaarum* sp. nov. all from Sulawesi (Indonesia) are described and figured. The new species belong to the *E. marseulii* Deyrolle, 1864 species-group, established in this paper. A key to species of this group is provided including *E. scintillans* Deyrolle, 1864 and *E. lunatus* Fisher, 1921.

Key words: Coleoptera: Buprestidae, Sulawesi, *Endelus* (s. str.) *barclayi* sp. nov., *Endelus* (s. str.) *splendens* sp. nov., *Endelus* (s. str.) *nairaarum* sp. nov., *Endelus* (s. str.) *marseulii* Deyrolle, 1864, new species-group.

Introduction

The present paper is continuing my studies of the genus *Endelus* Deyrolle, 1864 (Kalashian 1995; 1997; 1999a & b; 2007) and is dedicated to description of three new species from Sulawesi, Indonesia. The new species by their body shape, structure of head and pronotum and especially by characteristic color pattern of elytra are forming species-group together with the species described earlier from Sunda and Philippine Islands – *E. marseulii* Deyrolle, 1864 (= *E. modiglianii* Kerremans, 1896, synonymy was established in Théry 1932), *E. scintillans* Deyrolle, 1864 and *E. lunatus* Fisher, 1921.

Material studied is deposited in the following collections:

BMNH – The Natural History Museum, London, United Kingdom;
EJCB – Collection E.Jendek, Bratislava, Slovakia;
MKCY – Collection M.Kalashian, Yerevan, Armenia;
NMPC – Národní Muzeum v Praze, Prague, Czech Republic;
VKCB – Collection V.Kubáň, Brno, Czech Republic.

Species-group *Endelus* (s. str.) *marseulii* gr. nov.

Body rather robust or moderately elongate, 2.0-2.4 times as long as wide, head large, distinctly widened anteriorly, eyes strongly convex, rounded or angularly projected in dorsal aspect, oculofrontal bords obtuse-angled, concavity of frontovertex shallow. Pronotum distinctly wider posteriorly than anteriorly, slightly narrower than elytral base, disc with slightly separated transversal elevation. Elytra with distinct humeral tubercles, slightly adpressed medially of tubercles. Coloration more or less brightly metallic, with characteristic pattern of spots and bands as in plate 16, figs 1-6.

By the presence of slightly pronounced elevation on pronotum and moderately elongate body to the species of the group some similarity shows *E. weyersi* Ritsema, 1888 and its relative species (*E. quadraticollis* Kerremans, 1894, *E. brianthi* Thery, 1932). These species can be easily distinguished by less projected eyes, by the shape of pronotum with anterior and posterior margins subequal in length, by pronotum distinctly narrower than elytral base, and by unicolorous elytra without any pattern.

Descriptions of new taxa

Endelus (s. str.) *barclayi* sp. nov. (Plate 16, fig. 1)

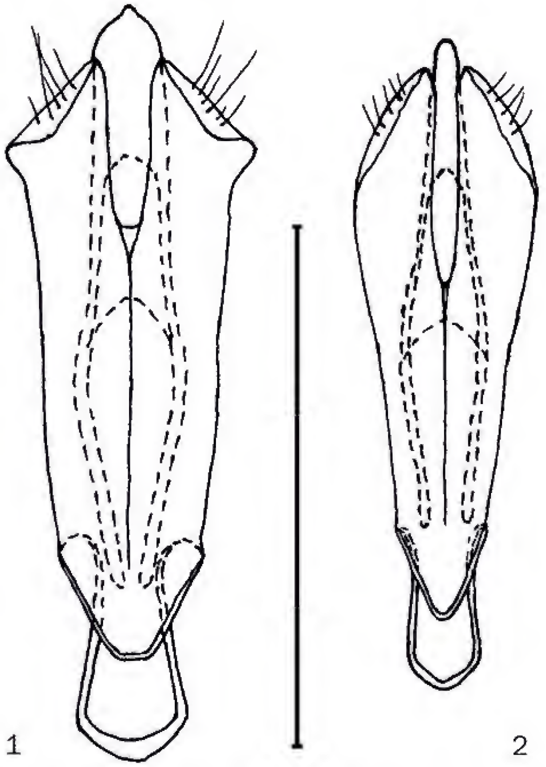
Holotype ♂ INDONESIA, SULAWESI UTARA, Dumoga-Bone N.P., February 1985/ Fog 3, 315 m. 8.ii.85 BMNH Plot B/ R.Ent.Soc.Lond., PROJECT WALLACE, B.M. 1985-10 (BMNH).

Paratypes 3 specimens: 1♀ INDONESIA, SULAWESI UTARA, Dumoga-Bone N.P., November 1985/ Malaise trap/ lowland forest ca 200 m/ R.Ent.Soc.Lond., PROJECT WALLACE, B.M. 1985-10 (BMNH); 1♀ the same data, but March 1985 (MKCY); 1♀ the same data, but April 1985 (BMNH).

Derivatio nominis: The new species is dedicated to M.Sc. Maxwell V.L. Barclay, Head Curator, Coleoptera Department of Entomology of BMNH, with my deepest gratitude and respect.

Distribution: Sulawesi (Indonesia).

Description: Body rather robust, 2.05-2.10 times as long as wide, moderately convex, dark bronzy with more or less distinct greenish reflection on sides of pronotum, elytra dark violet-blue with 3 pairs of bluish-green spots of moderate size – rounded near humeri and at the level of posterior 1/4, and slightly obliquely transversal near middle, elytral apex slightly brightened. Surface shiny, without shagreen except of microreticulated silky lustrous elytral spots. Body length 3.12-3.50 mm, width - 1.52-1.70 mm.



Figures 1-2. *Endelus* (s. str.) spp., male genitalia. 1 - *E.* (s. str.) *barclayi* sp. nov. (holotype BMNH); 2 - *E.* (s. str.) *splendens* sp. nov. (paratype MKCY) [Scale bar 0.5 mm].

Head large, enlarged anteriorly, slightly wider than anterior margin of pronotum, frontovertex slightly arcuately concave, oculofrontal bords widely obtuse-angled, rounded, eyes angularly projected from head outline. Clypeus slightly transversely triangular with anterior margin nearly straight, separated from frons by deep bisinuate groove which continues laterally behind the strong keels edged antennal cavities. Frons strongly widened posteriorly, with thin medial longitudinal groove. Surface with rather big but very superficial and sparse punctures. Antennae serrate from antennomere 5 which is distinctly longitudinal, antennomere 6 nearly equilateral, following moderately transversal.

Pronotum 2.3-2.4 times as wide as long, widest between middle and posterior 1/3. Anterior margin slightly bisinuate, laterally edged with indistinct groove, sides widely slightly irregularly arcuate, weakly serrate, fringed with thin groove, posterior margin strongly bisinuate with wide medial lobe nearly straight cut posteriorly. Pronotum with wide transversal elevation on disk, flattened along sides and slightly adpressed along posterior margin. Surface with rather big superficial irregular punctures laterally and basally, middle portion with sparse small punctures. Scutellum nearly equilaterally triangular.

Elytra approximately 1.6 times as long as wide, widest behind humeri, slightly and nearly straight narrowed towards approximately middle, then stronger and very weakly convexly narrowed to slightly irregularly arcuate apex. Elytra convex, narrowly flattened along sides behind humeri in anterior 1/3, transversely adpressed medially of humeral tubercles. Elytral sides very weakly serrate, fringed with thin groove reaching the level of posterior pair of spots. Surface with small distinct irregular punctures slightly smoothed posteriorly.

Prosternal process with dense large and rough transversal punctures, middle portion of metasternum anteriorly (before metasternal suture) with very rough short arc-shaped transversal wrinkles, behind suture with deep rasp-shaped punctures medially, sides of sternum and anterior half of first visible abdominal sternite (actually, fused sternites 3 and 4) with long oblique wrinkles, posteriorly abdomen with strongly smoothed and nearly indistinct transversal sinuous wrinkles. Anal sternite rounded distally in both sexes.

Male genitalia as in fig. 1.

Sexual dimorphism: Sexual dimorphism very slightly pronounced in the structure of abdomen which is weakly more convex in female than in male.

Differential diagnose: see key below.

***Endelus* (s. str.) *splendens* sp. nov.** (Plate 16, fig. 3)

Holotype, ♂ S Sulawesi, 38 km SE Pendolo vill. (pass), 120.46.55E, 2.14035S, 17 July 1999, 1200 m, Bolm leg. (VKCB).

Paratypes 8 specimens: 3♂, 1♀ same data (NMPC, EJCB, MKCY); 3♀ INDONESIA, SULAWESI UTARA, Dumoga-Bone N.P., 26.iv- 7 June 1985/ Malaise trap/ Edwards camp, ca 680m/ R.Ent.Soc.Lond., PROJECT WALLACE, B.M. 1985-10 (BMNH, MKCY); 1♀ INDONESIA, SULAWESI UTARA, Dumoga-Bone N.P., May 1985/ Malaise trap / G. Mogogonipa, summit, 1008 m/ R.Ent. Soc.Lond., PROJECT WALLACE, B.M. 1985-10 (BMNH).

Derivatio nominis: The name is derived from Latin “splendeo” – “shiny”, “splendid” to stress bright and shiny coloration of the new species

Distribution: Sulawesi (Indonesia).

Description: Body moderately elongate, 2.25-2.40 times as long as wide, moderately convex, nearly black with bluish or violet reflection more pronounced on elytra, pronotum with small longitudinal bluish-green spots laterally, elytra with bluish-green pattern of two pairs of rather small slightly irregularly round spots on humeral tubercles and apically, narrow band widely interrupted near suture approximately at middle and pair of large oblique spots between posterior 1/4 and apical spots. Surface shiny, without shagreen except of microreticulated silky lustrous elytral spots and band. Body length 3.0-3.7 mm, width - 1.25-1.50 mm.

Head large, enlarged anteriorly, distinctly wider than anterior margin of pronotum, frontovertex rather distinctly nearly triangularly concave, oculofrontal bords moderately obtuse-angled, rounded, eyes angularly projected from head outline. Clypeus transversely triangular with anterior margin slightly arcuately emarginated, frons with pair of deep postclypeal foveae and pair of indistinct transversal grooves laterally behind strong keels of antennal cavities. Frons distinctly widened posteriorly, with thin medial longitudinal groove bearing deep very small fovea at the level of posterior 1/4 of eyes. Frons with indistinct traces of puntures, vertex with sparse very superficial punctures of moderate size. Antennae serrate from antennomere 5 which is distinctly longitudinal, antennomere 6 nearly equilateral, following moderately transversal.

Pronotum 2.05-2.25 times as wide as long, widest in posterior 1/3-1/4. Anterior margin very weakly bisinuate, sides slightly angularly irregularly arcuate, weakly serrate, fringed with thin groove, posterior margin strongly bisinuate with wide medial lobe very slightly emarginated in front of scutellum. Pronotum with wide transversal elevation on disk, flattened along sides and slightly adpressed along posterior margin. Surface with few big flat punctures medially partially fused into short irregular wrinkles. Scutellum equilaterally triangular.

Elytra 1.7-1.8 times as long as wide, widest just behind humeri, slightly and very weakly sinuately narrowed towards approximately middle, then stronger and very weakly convexly narrowed to slightly irregularly arcuate apex. Elytra convex, narrowly flattened along sides behind humeri in anterior 1/3, slightly transversely adpressed medially of humeral tubercles. Elytral sides very weakly serrate, fringed with thin groove reaching the level of middle of posterior pair of spots. Surface with small rather distinct irregular punctures slightly smoothed posteriorly.

Prosternal process and middle portion of metasternum anteriorly (before metasternal suture) with very rough sinuous transversal wrinkles, behind suture metasternum with moderately deep hyphen-shaped punctures medially, sides of sternum and whole surface of first visible abdominal sternite (actually, fused sternites 3 and 4) with long oblique wrinkles, following sternites with strongly smoothed and nearly indistinct transversal sinuous wrinkles. Anal sternite rounded distally in both sexes.

Male genitalia as in fig. 2.

Sexual dimorphism: Sexual dimorphism very slightly pronounced in the structure of abdomen which is weakly more convex in female than in male.

Differential diagnose: see key below.

***Endelus* (s. str.) *nairaarum* sp. nov.** (Plate 16, fig. 2)

Holotype ♀ INDONESIA, SULAWESI UTARA, Dumoga-Bone N.P., November 1985/ Malaise trap / G. Mogogonipa, summit, 1008 m/ R.Ent.Soc.Lond., PROJECT WALLACE, B.M. 1985-10 (BMNH).

Paratype 1♀ same data but May, 1985 (MKCY).

Derivatio nominis. The new species is dedicated to my wife, Mrs. Naira Manukyan, and to my good friend, Mrs. Naira Ayvazyan, with gratitude and respect for their help and understanding.

Distribution: Sulawesi (Indonesia).

Description: Body moderately elongate, 2.30-2.35 times as long as wide, moderately convex, golden-green, elytra dark violet-blue with golden-green pattern of pair of large spots on humeri, two bands near middle and posterior 1/4 widely interrupted near suture, and pair of small indistinct spots apically. Surface shiny, without shagreen except of microreticulated silky lustrous elytral spots and bands. Body length 3.50-3.53 mm, width - 1.50-1.53 mm.

Head large, enlarged anteriorly, wider than anterior margin of pronotum, frontovertex slightly arcuately concave, oculofrontal bords moderately obtuse-angled, rounded, eyes angularly projected from head outline. Clypeus transversely triangular with anterior margin slightly arcuately emarginated, separated from frons by deep bisinuate groove which continues laterally behind the medial half of strong keels edged antennal cavities, besides, frons with pair of transversal grooves behind lateral 1/3 of these keels. Frons strongly widened posteriorly, with thin medial longitudinal groove. Frons with few big rounded superficial punctures, on vertex punctures denser, flat but rather distinct. Antennae serrate from antennomere 5 which is moderately longitudinal, antennomer 6 slightly, following moderately transversal.

Pronotum 2.25-2.35 times as wide as long, widest near posterior 1/4. Anterior margin slightly bisinuate, laterally edged with indistinct groove, sides widely slightly irregularly arcuate, weakly serrate, fringed with thin groove, posterior margin strongly bisinuate with wide medial lobe slightly emarginated in front of scutellum. Pronotum with wide transversal elevation on disk, flattened along sides and slightly adpressed along posterior margin. Surface with rather numerous big flat punctures partially fused into sinuous irregular wrinkles medially. Scutellum slightly transversely triangular, nearly straight cut posteriorly.

Elytra approximately 1.75-1.80 times as long as wide, widest just behind humeri, slightly and very weakly sinuately narrowed towards approximately middle, then stronger and very weakly convexly narrowed to slightly irregularly arcuate apex. Elytra convex, narrowly flattened along sides behind humeri in anterior 1/3, very slightly transversely adpressed medially of humeral tubercles. Elytral sides very weakly serrate, fringed with thin groove reaching the level of middle of posterior colored band. Surface with small dense distinct irregular punctures slightly smoothed posteriorly.

Prosternal process and middle portion of metasternum anteriorly (before metasternal suture) with rather rough and short sinuous transversal wrinkles, behind suture metasternum with moderately deep rasp-shaped punctures medially, sides of sternum and whole surface of first visible abdominal sternite (actually, fused sternites 3 and 4) with long oblique wrinkles, following sternites with strongly smoothed and nearly indistinct transversal sinuous wrinkles. Anal sternite in female rounded distally. Male is unknown.

Sexual dimorphism: Not determined yet.

Differential diagnose: see key below.

Key to the species of *Endelus* (s. str.) *marseuli* species group

1 Eyes rounded in dorsal aspect (Plate 16, figs 5-6) 2
– Eyes angularly projected from head outline in dorsal aspect. (Figs 1-4). Species from Sulawesi 3
2 Body more elongate, 2.3 times as long as wide, elytra 1.75 times as long as wide. Punctuation of head and pronotum denser and more distinct. 3.0 mm. The Philippines: Negros .... *Endelus lunatus* Fisher, 1921 (Plate 16, fig. 5)
– Body more robust, 2.0-2.2 times as long as wide, elytra 1.50-1.65 times as long as wide. Punctuation of head and pronotum sparser and less distinct. 3.25-3.45 mm. Borneo, Sumatra and Mentawei Islands .... *Endelus marseulii* Deyrolle, 1864 (Plate 16, fig. 6)
3 Oculofrontal bord very obtuse-angled, frontovertex very slightly concave. Background coloration of body golden-yellow, with very slight greenish or reddish reflection. 3.6-3.8 mm .... *Endelus scintillans* Deyrolle, 1864 (Plate 16, fig. 4)
– Oculofrontal bord less obtuse-angled, concavity of frontovertex deeper. Background coloration of body darker, golden-green, dark bronzy with greenish reflection or nearly black with bluish or violet reflection 4
4 Body more robust, 2.05-2.10 times as long as wide, elytra 1.6 times as long as wide. Body dark bronzy with more or less distinct greenish reflection on sides of pronotum, elytra dark violet-blue with 3 pairs of bluish-green spots of moderate size - rounded near humeri and at the level of posterior 1/4, and slightly obliquely transversal near middle. 3.12-3.5 mm .... *Endelus barclayi* sp. nov. (Plate 16, fig. 1)
– Body more elongate, 2.25-2.40 times as long as wide, elytra 1.7-1.8 as long as wide 5
5 Body nearly black with bluish or violet reflection more pronounced on elytra, elytra with bluish-green pattern of two pairs of rather small slightly irregularly round spots on humeral tubercles and apically, narrow band widely interrupted near suture approximately at middle and pair of large oblique spots between posterior 1/4 and apical spots. Frons with indistinct traces of punctures, vertex with sparse very superficial punctures of moderate size. 3.0-3.7 mm .... *Endelus splendens* sp. nov. (Plate 16, fig. 3)

– Body golden-green, elytra dark violet-blue with golden-green pattern of pair of large spots on humeri, two bands near middle and posterior 1/4 widely interrupted near suture, and pair of small indistinct spots apically. Frons with few big rounded superficial punctures, on vertex punctures denser and bigger, flat but rather distinct. 3.50-3.53 mm .... *Endelus nairaarum* sp. nov. (Plate 16, fig. 2)

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The aims of the Society are: to promote development of entomology in Latvia, to popularise entomological knowledge, to attract members active in fundamental and applied research in entomology, to offer methodological assistance to educational institutions, and to develop international collaboration in entomology and related disciplines.

The investigations carried out by Latvian entomologists are parts of research grants, international projects, or through the initiative of individual members.

The main activities of Latvian entomologists are as follows:

- Publication of the journal ‘Latvijas Entomologs’. In 2011, the 50th issue appeared. The PDF files are available at http://leb.daba.lv
- Participation in NGO activities via comments on drafts of legislative acts, particularly those concerning protected species, and conservation of nature in forests and agricultural lands.
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- Every year the Society elects an ‘Insect of the Year’ and an ’Invertebrate of the year’, and distributes knowledge about these particular species in mass media, museums, schools etc. The Society has done this for the past 10 years.
- Members work with school children promoting the development of their first scientific studies. We also participate in the Nights of Scientists.
- The Society organises excursions (in winter, spring and summer) to any of the protected territories to get additional knowledge about the territory and to educate enthusiasts.
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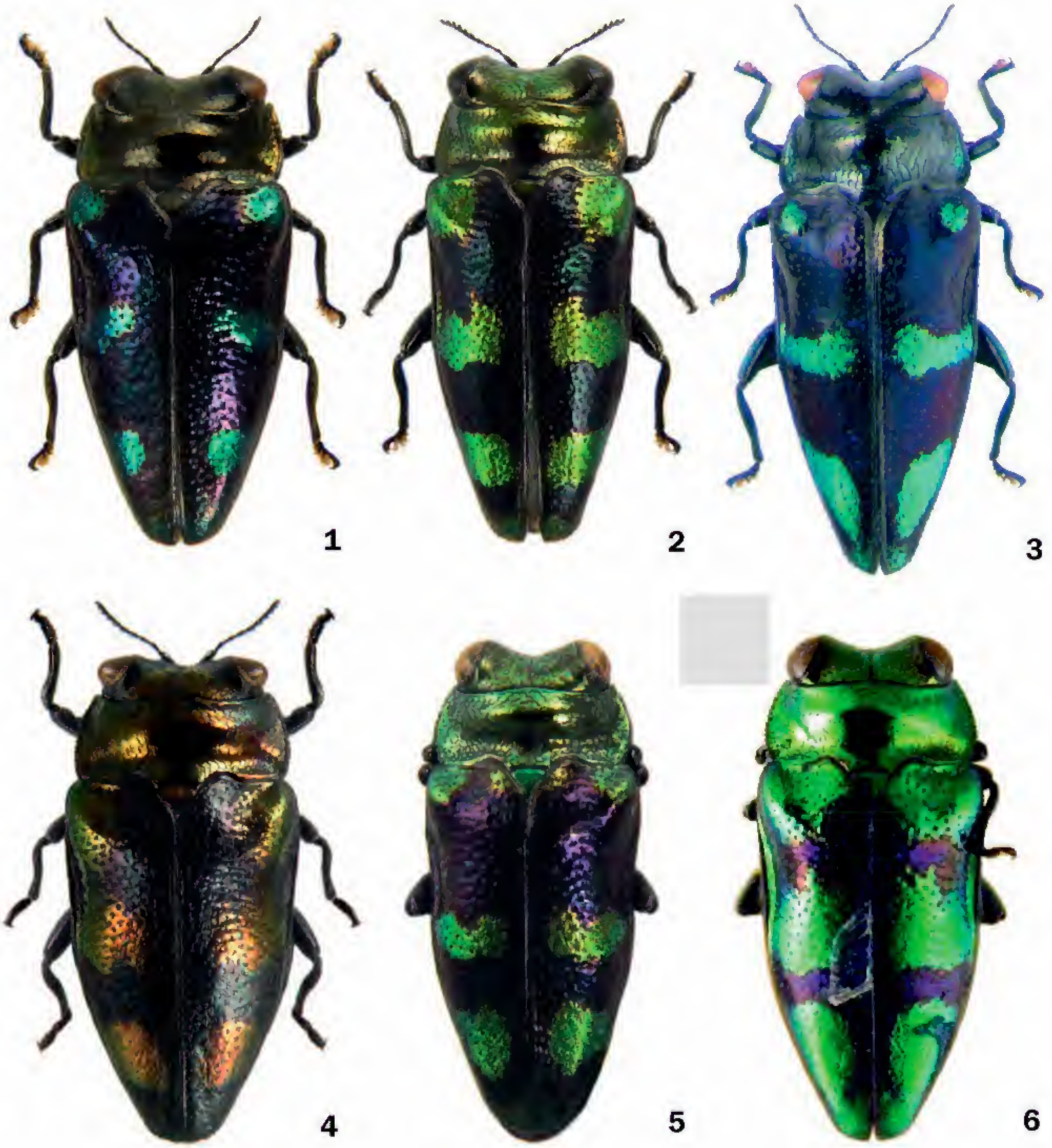
Plate 16

KALASHIAN M.Yu.: New species of *Endelus* Deyrolle, 1864 (Coleoptera: Buprestidae) from Sulawesi, Indonesia



Figures 1-6. *Endelus* (s. str.) spp. (dorsal view).

1: *E.* (s. str.) *barclayi* sp. nov. (holotype, photo: V.Kubáň); 2: *E.* (s. str.) *nairaarum* sp. nov. (holotype, photo: V.Kubáň); 3: *E.* (s. str.) *splendens* sp. nov. (paratype EJCB, photo: K.V.Makarov & G.H.Karagyan); 4: *E.* (s. str.) *scintillans* Deyrolle, 1864 (NMPC, photo: V.Kubáň); 5: *E.* (s. str.) *lunatus* Fisher, 1921 (holotype, photo: V.Kubáň); 6: *E.* (s. str.) *marseuli* Deyrolle, 1864 (syntype of *E.* (s. str.) *modiglianii* Kerremans, 1896 (BMNH, photo: E.Jendek)).